

# CLAIMS

1. A method for establishing a data link service connection for a bi-directional service to be provided between first and second nodes through a network, the method comprising:

responsive to a request to initiate the service connection at the first node, generating a local index at the first node indicative of the service to be provided;

sending a first signaling message containing the index from the first node and service parameters of both of the nodes via the network to the second node;

upon receiving the message at the second node, initiating the service connection at the second node responsive to the index and the service parameters, and sending a second signaling message via the network to the first node; and

upon receiving the second signaling message at the first node, activating the service indicated by the index.

2. A method according to claim 1, wherein the service parameters are indicative of a data link port on which the service is to be provided, and wherein activating the service comprises activating the service on the data link port indicated by the service parameters.

3. A method according to claim 2, wherein the service parameters are indicative of the data link port on the first node on which the service is to be provided.

4. A method according to claim 2, wherein the service parameters are indicative of the data link port on the second node on which the service is to be provided.

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5. A method according to claim 2, wherein the service connection comprises an Ethernet connection, and wherein the index is further indicative of a Virtual LAN (VLAN) address to which the service is to be provided.

6. A method according to claim 1, wherein the service comprises a transparent LAN service (TLS), and wherein the index is indicative of a TLS instance on which the service is to be provided.

7. A method according to claim 1, wherein the service comprises a SONET service, and wherein the service parameters are indicative of a SONET path on which the service is to be provided.

8. A method according to claim 1, wherein the service parameters further contain a field identifying a service type of the requested service.

9. A method according to claim 1, wherein the service parameters are configured to form a part of a Management Information Base maintained at the nodes.

10. A method according to claim 1, wherein sending the first signaling message comprises sending a signaling packet in which the service parameters are encapsulated in an object that is ignored and passed on by packet-switching routers along a route of the packet, and is received and read only at the second node.

11. A method according to claim 10, wherein sending the signaling packet comprises sending a resource reservation packet in which the object has a class number that causes the routers to ignore it.

12. A method for establishing a data link service connection for a service to be provided between first and

1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2216-2217		2217-2218		2218-2219		2219-2220		2220-2221		2221-2222		2222-2223		2223-2224	
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Country	Year	Population (millions)	GDP (billion USD)	Per capita GDP (USD)	Life expectancy (years)	Infant mortality (per 1,000 live births)	Unemployment (%)	Urban population (%)	Health expenditure (billion USD)	Health expenditure per capita (USD)
Algeria	2000	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2001	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2002	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2003	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2004	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2005	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2006	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2007	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2008	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2009	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2010	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2011	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2012	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2013	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2014	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2015	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2016	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2017	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2018	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2019	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2020	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2021	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2022	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2023	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2024	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2025	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2026	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2027	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2028	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2029	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2030	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2031	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2032	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2033	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2034	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2035	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2036	29.0	10.0	345	72	10	10	55	0.5	17
Algeria	2037	29.0	10.0	345	72	10	10	55	0.5	17

responsive to a request to initiate the service connection at the first node, generating a local index at the first node indicative of the service to be provided;

initiating the service connection at the second node responsive to the index received in the signaling packet.

14. A communication network, comprising:

a plurality of intermediate nodes that are configured to operate as packet-switching routers so as to convey data packets between the first and second access nodes,

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15. A network according to claim 14, wherein the service parameters are indicative of a data link port on which the service is to be provided, and wherein the service is activated on the data link port indicated by the service parameters.

17. A network according to claim 15, wherein the service parameters are indicative of the data link port on the second node on which the service is to be provided.

19. A network according to claim 14, wherein the service comprises a transparent LAN service (TLS), and wherein the service parameters are indicative of a TLS instance on which the service is to be provided.

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21. A network according to claim 14, wherein the service parameters further contain a field identifying a service type of the requested service.

23. A network according to claim 14, wherein the first signaling message comprises a signaling packet in which the service parameters are encapsulated in an object that is ignored and passed on by the intermediate nodes along a route of the packet, and is received and read only at the second node.

25. A communication network, comprising:

a plurality of intermediate nodes that are configured to operate as label-switched routers so as to provide a label-switched tunnel between the first and second access nodes,

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encapsulated in the signaling packet in an object that is ignored and passed on by label-switching routers along the tunnel, and is received and read only at the second node, and so that the service connection is initiated at the second node responsive to the index received in the signaling packet.

26. A network according to claim 25, wherein the signaling packet comprises a resource reservation packet in which the object has a class number that causes the label-switching routers to ignore it.

27. A method for establishing a data link service connection for a bidirectional service to be provided between first and second nodes via first and second label-switched tunnels through a network, the method comprising:

responsive to a request to initiate the service connection at the first node, generating a local index at the first node indicative of parameters of the service to be provided;

sending a first signaling message containing the index from the first node via the network to the second node;

upon receiving the message at the second node, initiating the service connection at the second node responsive to the index, and sending a second signaling message via the network to the first node; and

upon receiving the second signaling message at the first node, activating the service indicated by the index via the first and second label-switched tunnels.

28. A method according to claim 27, wherein the index is indicative of a data link port on which the service is to

36. A method according to claim 27, wherein sending the first signaling message comprises sending a signaling





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39. A network according to claim 38, wherein the index is indicative of a data link port on which the service is to be provided, and wherein the service is activated on the data link port indicated by the index.

40. A network according to claim 39, wherein the index is indicative of the data link port on the first node on which the service is to be provided.

41. A network according to claim 39, wherein the index is indicative of the data link port on the second node on which the service is to be provided.

42. A network according to claim 39, wherein the service connection comprises an Ethernet connection, and wherein the index is further indicative of a Virtual LAN (VLAN) address to which the service is to be provided.

43. A network according to claim 38, wherein the service comprises a transparent LAN service (TLS), and wherein the index is indicative of a TLS instance on which the service is to be provided.

44. A network according to claim 38, wherein the service comprises a SONET service, and wherein the index is indicative of a SONET path on which the service is to be provided.

45. A network according to claim 38, wherein the index further contains a field identifying a service type of the requested service.

46. A network according to claim 38, wherein the index is configured to form a part of a Management Information Base maintained at the nodes.

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47. A network according to claim 38, wherein the first signaling message comprises a signaling packet in which the index is encapsulated in an object that is ignored and passed on by the label-switched routers along the tunnel, and is received and read only at the second node.

48. A network according to claim 47, wherein the signaling packet comprises a resource reservation packet in which the object has a class number that causes the label-switched routers to ignore it.